UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,286	07/29/2003	Patrick D. McCusker	03CR166/KE	5711

7590 09/24/2008

ROCKWELL COLLINS, INC.
Attention: Kyle Eppele
M/S 124-323
400 Collins Rd. NE
Cedar Rapids, IA 52498

EXAMINER	
BROADHEAD, BRIAN J	

ART UNIT	PAPER NUMBER
3664	

MAIL DATE	DELIVERY MODE
09/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT H. KUMMER, JR., JACQUES E. HASBANI,
and RICHARD HORREE

Appeal 2008-2621
Application 10/629,286
Technology Center 3600

Decided: September 23, 2008

Before: HUBERT C. LORIN, ANTON W. FETTING and
STEVEN D.A. McCARTHY, *Administrative Patent Judges.*

McCARTHY, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134 (2002) from the final rejection of claims 1-19. We have jurisdiction under 35 U.S.C § 6(b) (2002). We AFFIRM the rejections of claims 1-16, 18 and 19. We

REVERSE the rejection of claim 17.

The claims on appeal relate to warning aircraft pilots of potential hazards. (Spec. 1.) Independent claim 1 is typical:

> 1. A method of assuring separation between an aircraft and potential flight hazards, comprising:
> predicting an intended path of the aircraft;
> identifying a potential hazard to the aircraft along the intended path;
> determining a distance from the potential hazard that the aircraft is required to maintain;
> determining an ability of the aircraft to maneuver to avoid the identified hazard and to remain further from the identified hazard than the distance;
> determining a probability that the aircraft will not maintain the distance from the identified hazards; and
> alerting a pilot of the aircraft if the probability is greater than a predetermined level.

ISSUES

The issues in this appeal are whether the Appellants have shown that the Examiner erred by:

rejecting claims 1-3, 9-15 and 17-19 under 35 U.S.C. § 102(e) (2002) as being anticipated by Ybarra (Publ. US 2004/0068372 A1, publ. 8 Apr. 2004);

rejecting claims 4-7 under 35 U.S.C. § 103(a) (2002) as being unpatentable over Ybarra and Myers (Patent US 6,085,147, issued 4 Jul. 2000);

rejecting claim 16 under § 103(a) as being unpatentable over Ybarra and Campbell (Publ. 2004/0024500 A1, publ. 5 Feb. 2004); and

rejecting claim 8 under § 103(a) as being unpatentable over Ybarra, Myers and Campbell.

These issues turn, at least in part, on whether Ybarra discloses a method including the step of alerting a pilot of the aircraft if the probability that the aircraft will not maintain a distance from identified hazards is greater than a predetermined level; and on whether Ybarra discloses a system including a visual notification apparatus configured to highlight at least one of a graphical representation of a potential hazard and at least part of a graphical representation of the flight path of the aircraft, to thereby advise of the possibility of a violation of any of the required separation.

FINDINGS OF FACT

The record supports the following findings of fact ("FF") by a preponderance of the evidence.

1. Ybarra discloses a system including a threat avoidance processor and displays. (Ybarra 2, ¶¶ 0021 and 0022.)

2. The system continuously determines the position of the aircraft and determines information from which the position of the aircraft in the future may be predicted. (Ybarra 4, ¶ 0033 and 5, ¶ 0042.) In other words, the system predicts an intended path of the aircraft.

3. The system continuously "assesses the risk of collision with terrain, or encountering adverse weather conditions" and provides alerts to the flight crew corresponding to the risks. (Ybarra 4, ¶ 0033.)

4. The system predicts threats based on working values of parameters and position or trend data (that is, data regarding the path of the aircraft). (Ybarra 5 ¶ 0043 and 8, claim 1.)

5. Among the parameters used in implementing a "controlled flight into terrain" threat avoidance processor are advice criteria, that is, parametric descriptions of forms and circumstances for providing audible or visual advice. (Ybarra 6 ¶ 0052; Tables 1 and 3.) The advice criteria include minimum terrain clearance distance and terrain "look-ahead," which the reference defines as the time or distance believed to be sufficient for escaping a threat. (Ybarra, Tables 3 and 4.)

PRINCIPLES OF LAW

"To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently." *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). A claim under examination is given its broadest reasonable interpretation consistent with the underlying specification when determining whether the subject matter of the claim is either anticipated or obvious. *In re American Acad. of Science Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Limitations not expressed in the language of the claims cannot be imported from the specification. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003).

A claim is unpatentable for obviousness under 35 U.S.C. § 103(a) if "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." In *Graham v. John Deere Co.*, 383 U.S. 1 (1966), the Supreme Court set out factors to be considered in determining whether claimed subject matter would have been obvious:

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

Id., 383 U.S. at 17.

ANALYSIS

A. The Rejection of Claims 1 and 11 Under § 102(e)

The Appellants contend that Ybarra does not disclose a method including the step of alerting a pilot of an aircraft if the probability that the aircraft will not maintain a distance from identified hazards is greater than a predetermined level as recited in claim 1. The Appellants also contend that Ybarra does not disclose a method including the step of advising a pilot of the aircraft if the possibility that the aircraft, traveling along the intended path, will be less than the distance from any of the terrain, weather events,

and nearby aircraft is above a predetermined threshold as recited in claim 11. (App. Br. 5.) We disagree.

Ybarra describes the system disclosed in the reference as one that continuously "assesses the risk of collision with terrain, or encountering adverse weather conditions" and provides alerts to the flight crew corresponding to the risks. (FF 3.) We agree with the Examiner that the risk assessed is a probability (or possibility, in the language of claim 11). Since the assessment is performed by a processor using numerical values of parameters such as the minimum terrain clearance distance and the "look-ahead" (*see* FF 5), the probability or possibility must be a number.

Ybarra's system assesses this risk in order to make a decision whether to provide an alert to the flight crew. In order to make a decision on the basis of a number such as the risk or probability of collision with the terrain, the processor must have another number to which the risk or probability might be compared. This number would be the "predetermined level" of claim 1 and the "predetermined threshold" of claim 11.

In view of this reasoning, we agree with the Examiner (Ans. 6-7) that Ybarra discloses "alerting a pilot of the aircraft if the probability is greater than a predetermined level" as recited in claim 1 and "advising a pilot of the aircraft if the possibility is above a predetermined threshold" as recited in claim 11. On the record before us, the Appellants have not shown that the Examiner erred in rejecting claims 1 and a under § 102(e).

B. The Rejection of Claim 17 Under § 102(e)

We agree with the Appellants (App. Br. 6) that Ybarra does not disclose a method including the step of accessing information relative to areas of restricted airspace proximal the aircraft as recited in claim 17. Essentially, the Examiner and the Appellants disagree as to the scope of the term "restricted airspace." During prosecution, the Patent and Trademark Office "applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art . . . ." *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). We understand "restricted airspace" to be a term of art in relevant fields such as avionics, aeronautical engineering and design and airplane navigation and flight identifying a type of special use airspace.

Ybarra discloses a system which accesses information relative to obstacles such as terrain, adverse weather and other airplanes. (Ybarra 4, ¶ 0033). The Examiner has not identified for us any passage in Ybarra disclosing a step of accessing information relative to a restricted airspace. Since "restricted airspace" is a term of art, its meaning cannot extend reasonably to encompass terrain, adverse weather or other airplanes. We do not sustain the Examiner's finding that Ybarra discloses accessing information relative to areas of restricted airspace proximal the aircraft.

On the record before us, the Appellants have shown that the Examiner erred in rejecting claim 17 under § 102(e).

C. The Rejection of Claim 18 Under § 102(e)

The Appellants contend that Ybarra does not disclose a visual notification apparatus configured to highlight at least one of a graphical representation of a potential hazard and at least part of a graphical representation of the flight path of the aircraft, to thereby advise of the possibility of a violation of any of the required separation distances. (App. Br. 6). The Examiner responds that this information is disclosed in paragraph 0017 of Ybarra. In particular, the Examiner points to Ybarra's statement that "[v]isual advice may be presented by symbols or colors of a graphic presentation for display to a flight crew member." (Ans. 8, citing Ybarra 2, ¶ 0017). The Examiner also points to Ybarra's statement that the display system may be of a conventional type as specified in Advisory Circular AC 25-23. (*Id.*) Since the Appellants did not file a reply contesting these findings, we sustain the findings. On the record before us, the Appellants have not shown that the Examiner erred in rejecting claim 18 under § 102(e).

D. The Rejection of Claims 4-8 and 16 Under § 103(a)

Claims 4-7 stand rejected under § 103(a) as being unpatentable over Ybarra and Myers. Claim 8 stands rejected under § 103(a) as being unpatentable over Ybarra, Myers and Campbell. The Appellants' sole contention with respect to the patentability of claims 4-8 is that these claims depend ultimately from claim 1 and that the Appellants believe claims 4-8 to be patentable for the same reasons advanced in support of the patentability of claim 1. Since we disagreed with the reasons advanced by the Appellants

in support of the patentability of claim 1, namely, the Appellants' assertion that Ybarra fails to disclose a method including the step of alerting a pilot of the aircraft if the probability that the aircraft will not maintain a distance from identified hazards is greater than a predetermined level, we conclude that the Appellants have not shown on the record before us that the Examiner erred in rejecting claims 4-8 under § 103(a).

Claim 16, which depend from clam 11, stands rejected under § 103(a) as being unpatentable over Ybarra and Campbell. The Appellants' sole contention with respect to the patentability of claim 16 is that claim 16 depend ultimately from claim 11 and that the Appellants believe claim 16 to be patentable for the same reasons advanced in support of the patentability of claim 11. Since we disagreed with the reasons advanced by the Appellants in support of the patentability of claim 11, namely, the Appellants' assertion that Ybarra does not disclose a method including the step of advising a pilot of the aircraft if the possibility that the aircraft, traveling along the intended path, will be less than the distance from any of the terrain, weather events, and nearby aircraft is above a predetermined threshold, we conclude that the Appellants have not shown on the record before us that the Examiner erred in rejecting claims 4-8 under § 103(a).

CONCLUSIONS

On the record before us, the Appellants have not shown that the Examiner erred in rejecting claims 1-3, 9-15, 18 and 19 under § 102(e) as being anticipated by Ybarra. The Appellants also have not shown that the Examiner erred in rejecting claims 4-7 under § 103(a) as being unpatentable

over Ybarra and Myers; in rejecting claim 16 under § 103(a) as being unpatentable over Ybarra and Campbell; and in rejecting claim 8 under § 103(a) as being unpatentable over Ybarra, Myers and Campbell.

On the record before us, the Appellants did show that the Examiner erred in rejecting claim 17 under § 102(e) as being anticipated by Ybarra.

DECISION

We AFFIRM the rejection of claims 1-16, 18 and 19.

We REVERSE the rejection of claim 17.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a) (2007). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED-IN-PART

JRG

ROCKWELL COLLINS, INC.
Attention: Kyle Eppele
M/S 124-323
400 Collins Rd. NE
Cedar Rapids, IA 52498